

## Claims

- 5 1. A green-emitting LED which is designed as a luminescence  
conversion LED, comprising a primary radiation source,  
which is a chip emitting in the UV or blue radiation  
region, and a layer of a phosphor which is arranged in  
front of the primary radiation source and completely or  
10 partially converts the radiation of the chip into green  
light of dominant wavelength  $\lambda_{\text{dom}} = 550$  to 570 nm,  
characterized in that the phosphor belongs to the class of  
the oxynitridosilicates, having a cation M and the  
empirical formula  $M_{(1-c)}\text{Si}_2\text{O}_2\text{N}_2\text{:D}_c$ , where D denotes a doping  
15 with divalent europium and where M comprises Sr as a  
constituent and  $M = \text{Sr}$  alone or  $M = \text{Sr}_{(1-x-y)}\text{Ba}_y\text{Ca}_x$  with  
 $0 \leq x+y < 0.5$  is used, the oxynitridosilicate completely  
or predominantly comprising the high-temperature-stable  
modification HT.
- 20 2. The LED as claimed in claim 1, characterized in that the  
Eu fraction makes up between 0.1 and 20 mol% of M.
3. The LED as claimed in claim 1, characterized in that Sr  
25 represents the majority of M and a proportion of M, in  
particular up to 30 mol%, is replaced by Ba and/or Ca.
4. The LED as claimed in claim 1, characterized in that a  
proportion of M, in particular up to 30 mol%, is replaced  
30 by Li and/or La and/or Zn.
5. The LED as claimed in claim 1, characterized in that part  
of the SiN group in the oxynitridosilicate of formula  
 $\text{MSi}_2\text{O}_2\text{N}_2$ , in particular up to 30 mol%, is replaced by the  
35 AlO group.

6. The LED as claimed in claim 1, characterized in that a proportion of Eu, in particular up to 30 mol%, is replaced by Mn.
- 5 7. The LED as claimed in claim 1, characterized in that the primary emission has a peak wavelength in the range from 380 to 430 nm, in particular at least 380 nm.
8. The LED as claimed in claim 1, characterized in that the green emission has a dominant wavelength in the range from  
10 556 to 564 nm.
9. The LED as claimed in claim 1, characterized in that the primary radiation is completely converted.
- 15 10. The LED as claimed in claim 1, characterized in that the chip is an InGaN chip with a peak emission wavelength in the range from 430 to 465 nm.
11. The LED as claimed in claim 1, characterized in that the  
20 LED is dimmable.